

AMENDMENTS TO THE CLAIMS

1. (currently amended) An intaglio printing press, comprising:

an intaglio plate cylinder supported ~~rotatably to be freely~~ rotatable;

~~at least one inking units unit which supply supplies~~ ink to the intaglio plate cylinder, each of the inking units having an ink supplying pattern roller in contact with the intaglio plate cylinder, and each of the ink supplying pattern rollers having different supply patterned portions;

an ink removing unit which removes surplus ink of the ink supplied to the intaglio plate cylinder; ~~and~~

an ink recycling unit provided upstream of the ink removing unit with respect to a rotation direction of the intaglio plate cylinder and downstream of the inking unit, and adapted to remove ink before the ink is removed by the ink removing unit and return the removed ink to the inking unit, the ink recycling unit including precedence ink removing means which removes the ink from the intaglio plate cylinder, and ink returning means which returns the ink removed by the precedence ink removing means to the inking unit, the precedence ink means including a pre-wiping pattern roller in contact with the intaglio plate cylinder to transfer desired ink on the intaglio plate cylinder.

2. (currently amended) The intaglio printing press according to claim 1, wherein the pre-wiping pattern roller has at least one convexly patterned region corresponding to the area where the desired ink is applied~~the ink recycling unit includes precedence ink removing means which removes the ink from the intaglio plate cylinder, and ink returning means which returns the ink removed by the precedence ink removing means to the inking unit.~~

3. (currently amended) The intaglio printing press according to claim 1~~claim 2~~, wherein the ink returning means includes at least one pipe connected between the precedence ink removal means and the inking unit, and a pump which supplies the ink to the inking unit through the pipe.

4. (currently amended) The intaglio printing press according to claim 3, further comprising:

ink amount detecting means which detects an amount of the ink stored in the inking unit to control ~~drive of~~ the pump in accordance with a detected result by the ink amount detecting means.

5. (canceled)

6. (currently amended) The intaglio printing press according to claim 1~~claim 2~~,

wherein the precedence ink removing means includes a ~~pre-wiping pattern roller which is in contact with the intaglio plate cylinder,~~ an ink transfer roller which transfers the ink on the pre-wiping pattern roller, and ink scraping means which scrapes the ink on the ink transfer roller.

7. (cancel)

8. (currently amended) The intaglio printing press according to claim 1~~claim 2~~, wherein the precedence ink removing means includes:

~~— a pre wiping pattern roller which is in contact with the intaglio plate cylinder and has at least one convexly patterned region corresponding to an area where desired ink is applied, in order to transfer the desired ink on the intaglio plate cylinder;~~

an ink transfer roller ~~which is in contact with the pre-wiping pattern roller~~ and adapted to transfer the ink transferred to the convexly patterned region of the pre-wiping roller;

an ink scraping blade which scrapes the ink on the ink transfer roller; and

a recovery blade which recovers the ink on the scraping blade, after being scraped by the ink scraping blade, into an ink recovery box.

9. (currently amended) The intaglio printing press according to claim 1~~claim 5~~, wherein the precedence ink removing means has a ~~pre-wiping pattern roller which is in contact with the intaglio plate cylinder and has a~~ diameter same as that of the ink supplying pattern roller.

10. (currently amended) The intaglio printing press according to claim 6, further comprising:

a recovery blade supported to be ~~freely~~movable and discharges the ink on the ink scraping means; and

a recovery box which recovers the ink discharged by the recovery blade.

11. (currently amended) The intaglio printing press according to claim 10, wherein the recovery blade is adapted to reciprocate substantially along a direction of an axis ~~move reciprocatingly in an approximate axis direction~~ of the ink transfer roller, across a surface of the scraping means.

12. (currently amended) ~~An~~ ~~The~~—intaglio printing press,  
~~according to claim 10, further comprising:~~

an intaglio plate cylinder supported rotatably;

at least one inking unit which supplies ink to the intaglio  
plate cylinder;

an ink removing unit which removes surplus ink of the ink  
supplied to the intaglio plate cylinder;

an ink recycling unit provided upstream of the ink removing  
unit with respect to a rotation direction of the intaglio plate  
cylinder and downstream of the inking unit, and adapted to remove  
ink before the ink is removed by the ink removing unit and return  
the removed ink to the inking unit, the ink recycling unit  
including,

precedence ink removing means which removes the ink from  
the intaglio plate cylinder, the precedence ink removing means  
including a pre-wiping pattern roller in contact with the intaglio  
plate cylinder, an ink transfer roller which transfers the ink on  
the pre-wiping pattern roller, and ink scraping means which scrapes  
the ink on the ink transfer roller, and

ink returning means which returns the ink removed by the  
precedence ink removing means to the inking unit;

a recovery blade supported to be movable and discharges the  
ink on the ink scraping means;

a recovery box which recovers the ink discharged by the recovery blade; and

a cutter which blocks a flow of the ink scraped by the scraping means and is provided upstream of the recovery blade in a direction of the ink flow.

13. (currently amended) The intaglio printing press according to claim 12, wherein the recovery blade is supported to be freely movable between a discharge position where the ink is discharged and a standby position, the recovery blade moves from the standby position to the discharge position when the ink flow is blocked by the cutter and recovers the ink into the recovery box, and thereafter moves from the discharge position to the standby position.

14. (original) The intaglio printing press according to claim 13, further comprising:

scraped ink detecting means which detects the ink scraped by the scraping means and provided upstream of the cutter in a direction of the ink flow; and

control means which controls the cutter and the recovery blade to be operated after a predetermined period of time which begins when the scraped ink detecting means detects the ink.

15. (original) The intaglio printing press according to claim 14, wherein the control means controls the cutter and the recovery blade to be operated after a predetermined period of time after an ink recovery operation by the cutter and the recovery blade is completed.

16. (original) The intaglio printing press according to claim 3, further comprising:

ink supply means which supplies new ink to the inking unit.

17. (currently amended) An ~~The~~ intaglio printing press,  
comprising: ~~according to claim 1,~~

an intaglio plate cylinder supported rotatably;

at least one inking unit which supplies ink to the intaglio plate cylinder;

an ink removing unit which removes surplus ink of the ink supplied to the intaglio plate cylinder; and

an ink recycling unit provided upstream of the ink removing unit with respect to a rotation direction of the intaglio plate cylinder and downstream of the inking unit, and adapted to remove ink before the ink is removed by the ink removing unit and return the removed ink to the inking unit, the ink recycling unit including,

precedence ink removing means which removes the ink from the intaglio plate cylinder, and

ink returning means which returns the ink removed by the precedence ink removing means to the inking unit,

wherein the inking units have a plurality of ink supplying pattern rollers ~~which are~~ in contact with the intaglio plate cylinder and have different supply patterned portions, respectively,

the precedence ink removing means has a pre-wiping pattern roller ~~which is~~ in contact with the intaglio plate cylinder, and

the pre-wiping pattern roller has at least one recovery patterned portion that is approximately the same as the supplying patterned portion of one of the ink supplying pattern rollers among the plurality of the ink supplying pattern rollers.

18. (original) The intaglio printing press according to claim 17,

wherein each of the patterned portions are formed on the plurality of the ink supplying pattern rollers in order to prevent the ink transferred from the respective patterned portions from overlapping on the intaglio plate cylinder, and

the pre-wiping pattern roller recovers only the ink supplied on the intaglio plate cylinder only by one of the ink supplying



pattern rollers among the plurality of ink supplying pattern rollers.

19. (original) The intaglio printing press according to claim 6, further comprising:

heating means which heats the scraping means.

20. (new) The intaglio printing press according to claim 17, wherein the recovery patterned portion of the pre-wiping pattern roller is convexly patterned region corresponding to an area where desired ink is applied, in order to transfer the desired ink on the intaglio plate cylinder, the intaglio printing press further comprising:

an ink transfer roller in contact with the pre-wiping pattern roller and adapted to transfer the ink transferred to the convexly patterned region;

an ink scraping blade which scrapes the ink on the ink transfer roller; and

a recovery blade which recovers the ink on the scraping blade, after being scraped by the ink scraping blade, into an ink recovery box.